

WHAT IS CLAIMED IS:

1. A method for continuous production of expanded plastic material for forming panels comprising: providing an apparatus for continuous production of expandable plastic material which includes a pouring channel, two injection assemblies, a high pressure pump, and a mixing head; a pouring step, in which at least one reaction component and a mixture of remaining for obtaining the expandable plastic material are introduced, at high pressure in said pouring channel by way of said two injection assemblies, said mixture being provided downstream of said high-pressure pump; a pouring hold step; and a recirculation step, and wherein during the pouring hold step said remaining components of the mixture are individually placed in the recirculation step.

2. The method of claim 1, comprising the step of providing said at least one reaction component constituted by isocyanate and said mixture of the remaining components constituted by polyol mixed with blowing agents, and catalysts.

3. The method of claim 2, comprising providing said apparatus with a first delivery branch, a second delivery branch which is distinct and separate from the first delivery branch, and a mixer arranged at the second delivery branch, said polyol being fed during the recirculated step by way of said first delivery branch.

4. The method of claim 3, comprising providing said apparatus with at least one duct for introducing blowing agents, and catalysts which merges onto said mixer, the polyol being introduced, during said pouring step, in said second delivery branch in order to flow through the mixer.

5. The method of claim 4, comprising providing one-way valves on said first and second delivery branches of said apparatus, said first delivery branch and said second delivery branch merging close to said mixing head.

6. The method of claim 5, comprising the step of recirculating said blowing agents and catalysts before they are introduced in said mixer.

7. The method of claim 5, comprising providing a polyol storage tank for said apparatus and wherein, during the recirculation step, the polyol is returned to the polyol storage tank.

8. The method of claim 5, comprising a transition step between the recirculation step and the pouring step, in which the pouring channel located in the mixing head is opened and passage toward said second branch is first opened to the polyol and then passage through said first branch is closed, the remaining components of the mixture being introduced after passage of the polyol in the mixer.

9. The method of claim 8, wherein during the transition step between the pouring step and the recirculation step, flow of the polyol through said mixer is interrupted after the at least one duct for introducing the blowing agents, and catalysts has been set to recirculation.

10. An apparatus for continuous production of expanded plastic material for forming panels, comprising: a mixing head which has formed therein a pouring channel, a self-cleaning piston movably mounted in said pouring channel; a first injection assembly and a second injection assembly for injection of at least one first component and the remaining components of the mixture, respectively; recirculation slots provided at said piston and arrangeable at said first and second injection assembly; a supply duct, said first injection assembly for injection of the remaining components of the mixture being connected to said supply duct; a first and a second delivery branches merging in said supply duct; a high-pressure pump; valve means arranged downstream of a high-pressure pump for controlling said delivery branches; a supply tank for said at least one first component to which an intake of said pump is connected; a mixer provided on said second delivery branch; at least one duct for introducing blowing agents and catalysts connected to said mixer; and a first recirculation duct connected to said first injection assembly for returning said at least first component into the storage tank.

11. The apparatus of claim 10, further comprising a first and a second one-way valves located on said first delivery branch and on said second delivery branch, said valves being adapted to prevent return of the injection material, said first and second delivery branches mutually merging close to
5 said mixing head.

12. The apparatus of claim 10, comprising a first and a second two-way valves located on said first delivery branch and on said second delivery branch, upstream of said mixer.

13. The apparatus of claim 12, further comprising a three-way valve for
10 recirculation of components located on said at least one duct for connection to the mixer.

14. The apparatus of claim 10, further comprising a three-way delivery valve for controlling said first and second delivery branches, located at a delivery exit of said high-pressure pump.